

ABSTRACT

A technique for producing iron utilizes agglomerations, such as briquettes or tablets, or powders, that include a sulfur-containing material such as iron sulfide, and an oxygen containing material such as iron oxide. The agglomerations or powders are substantially free of chemical binders and utilize iron and aluminum metal powders and pressure for compaction on either roll presses or tablet machines. Addition of metal powders provides rapid dissolution of the alloy and improved heat transfer. Iron sulfide agglomerations also provide consistent and improved sulfur recoveries compared to granulated iron sulfide additions with little to no sulfur odor.